# A Case Study of the Research-to-Operations (R2O) Process at HMT-HPC

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The Hydrometeorological Prediction Center (HPC) is the national center responsible for providing the nation's precipitation forecasts; therefore its ability to implement a successful research-to-operations process is critical. The main responsibility for this transition is given to the HPC's Hydrometeorological Testbed (HMT-HPC), which over the past four years has developed a methodology for testing and evaluating new developments from the research and numerical modeling communities and implementing them into HPC operations. The methodology consists of a three-step process of testing through real-time and retrospective forecasting experiments, subjective and objective evaluation, and operational training and implementation.

This presentation will illustrate the HMT-HPC's R2O procedure for transitioning experimental products into HPC operations by highlighting of the transition of two recent innovations: the Earth System's Research Laboratory Physical Science Division's (ESRL/PSD) 2nd generation reforecast dataset and the rime-factor snowfall product derived from the Ferrier microphysics of the Environmental Modeling Center's North American Mesoscale Model (NAM). The reforecast dataset is a quantitative precipitation (QPF) and probabilistic quantitative precipitation (PQPF) forecast product derived from the 2nd generation GEFS reforecast dataset, and is developed and maintained by ESRL/PSD. This dataset was featured in HMT-HPC's 2012 Atmospheric River Retrospective Forecasting Experiment (ARRFEX), where forecasters were asked to use the dataset in a pseudo-operational environment to aid in the creation of several different QPF/PQPF products that focused on improving the predictability of West-Coast extreme precipitation events. EMC's rime-factor snowfall product featured a close collaboration with HMT-HPC staff; this product was featured and evaluated in HMT-HPC's 2013 Winter Weather Experiment as a potential tool to advance the snowfall forecast guidance available to HPC winter weather forecasters.